

## EXPLORING ALTERNATIVES FOR STRATEGIC ACCESS TO AFGHANISTAN

BY

COLONEL KURT J. RYAN  
United States Army

### DISTRIBUTION STATEMENT A:

Approved for Public Release.  
Distribution is Unlimited.

USAWC CLASS OF 2009

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.



U.S. Army War College, Carlisle Barracks, PA 17013-5050

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle State Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. <b>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</b>					
1. REPORT DATE (DD-MM-YYYY) 20-03-2009		2. REPORT TYPE Strategy Research Project		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE  Exploring Alternatives for Strategic Access to Afghanistan				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)  Colonel Kurt J. Ryan				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  Colonel James D. Scudieri Department of Military Strategy, Planning, and Operations				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT In 2009, U.S. troop commitments will increase in Afghanistan, complicating the ability to deploy and sustain forces operating in the region. The U.S. must tackle the challenges of a larger military footprint in Afghanistan, including diplomatic, economic, and military impacts on nations in the region. This paper will explore the processes involved to deploy and sustain U.S. forces operating in Afghanistan and address options to overcome strategic access challenges. The author proposes five recommendations to the current strategy, including: a need to strengthen regional partnerships; reduce dependence on Afghan-Pakistani Ground Lines of Communication (GLOC); re-establish a Northern Distribution Network; seek alternative, regional air bases; and improve In-Transit Visibility (ITV) technology. To deploy and sustain up to sixty-thousand U.S. forces in Afghanistan, there must be a sound and executable strategic access plan.					
15. SUBJECT TERMS Distribution, Pakistan, GLOC, ALOC, NDN, ITV					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT  UNLIMITED	18. NUMBER OF PAGES  34	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED			19b. TELEPHONE NUMBER (include area code)



USAWC STRATEGY RESEARCH PROJECT

**EXPLORING ALTERNATIVES FOR STRATEGIC ACCESS TO AFGHANISTAN**

by

Colonel Kurt J. Ryan  
United States Army

Colonel James D. Scudieri  
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College  
CARLISLE BARRACKS, PENNSYLVANIA 17013



## **ABSTRACT**

AUTHOR: Colonel Kurt J. Ryan  
TITLE: Exploring Alternatives for Strategic Access to Afghanistan  
FORMAT: Strategy Research Project  
DATE: 20 March 2009      WORD COUNT: 6,430      PAGES: 34  
KEY TERMS: Distribution, Pakistan, GLOC, ALOC, NDN, ITV  
CLASSIFICATION: Unclassified

In 2009, U.S. troop commitments will increase in Afghanistan, complicating the ability to deploy and sustain forces operating in the region. The U.S. must tackle the challenges of a larger military footprint in Afghanistan, including diplomatic, economic, and military impacts on nations in the region. This paper will explore the processes involved to deploy and sustain U.S. forces operating in Afghanistan and address options to overcome strategic-access challenges. The author proposes five recommendations to the current strategy, including: a need to strengthen regional partnerships; reduce dependence on Afghan-Pakistani Ground Lines of Communication (GLOC); re-establish a Northern Distribution Network; seek alternative, regional air bases; and improve In-Transit Visibility (ITV) technology. To deploy and sustain up to sixty-thousand U.S. forces in Afghanistan, there must be a sound and executable strategic-access plan.





## EXPLORING ALTERNATIVES FOR STRATEGIC ACCESS TO AFGHANISTAN

There is little doubt that our greatest military challenge right now is Afghanistan.<sup>1</sup>

—Robert M. Gates

The above quote highlights the importance of developing sound strategy for U.S. commitments in Afghanistan over the coming years, including a need to reassess and potentially build alternatives for strategic access. Strategic access includes reliable Ground and Air Lines of Communication (GLOC/ALOC) to project necessary forces and materiel to the joint force commander (JFC).

Since the start of U.S. military operations in Afghanistan in 2001, the United States continues to expand its presence yearly. Between 2006 and 2008, U.S. troop strength grew approximately 40 percent, from 19,600 to over 32,000 military personnel, including an additional Brigade Combat Team (BCT), special operations forces, security-force trainers, a Marine Expeditionary Unit (MEU), and additional Provincial Reconstruction Teams (PRT). As recently as September 2008 Gen. David McKiernan, the commander of International Security and Assistance Force (ISAF) and Commander U.S. Forces Afghanistan (USFOR-A), requested an additional 30,000 U.S. troops, constituting three to four BCTs, and numerous, supporting, air and logistic enablers. A force increase of this size would constitute an additional 46 percent growth in troop strength.

Pres. George W. Bush approved the deployment of an additional BCT commencing January 2009, adding about 4,500 more troops to the 2008 end strength of approximately 33,000. In February 2009, Pres. Barack Obama approved the deployment of an additional 12,000 troops, including two brigade-sized forces, more

Marines, and supporting troops. These commitments represent a partial but still significant move toward meeting repeated requests from General McKiernan for more combat forces, a reinforcement the commander says is necessary to carry out the missions of counter-insurgency (COIN) operations and Afghan National Security Force (ANSF) training.<sup>2</sup>

The relative combat power that the U.S. can generate is constrained by the nation's capability to plan for, gain access to, and deliver forces and materiel to this theater of operation.<sup>3</sup> This paper will focus on the status of strategic partnerships in the region as well as a review of current distribution and sustainment processes. It will explore alternative, strategic-access options, including air basing in the region and consideration of other, ground-distribution networks to alleviate the challenges with a single Pakistani GLOC currently sustaining Operation Enduring Freedom (OEF) forces.

Finally, the paper will suggest improved technology solutions for In-Transit Visibility (ITV) to manage the flow of cargo as well as reduce pilferage. A new sustainment and distribution approach in support of forces operating in the Joint Operational Area (JOA) Afghanistan is necessary.

### Background - A Growing Logistics Challenge

Senior Defense Department leaders anticipate the general shift in sustainment support that will occur over the coming months and years as Central Command (CENTCOM) prepares to balance that support between two areas of operation, Iraq and Afghanistan. When Navy Vice Adm. Alan S. Thompson assumed the responsibility of Director, Defense Logistics Agency (DLA) in November 2008, the Deputy Under Secretary of Defense for Logistics and Materiel Readiness outlined several major

challenges facing DLA, most notably preparing for a drawdown of forces in Iraq and plus-up of forces in Afghanistan. The Honorable P. Jackson Bell stated,

Support for our forces in Afghanistan is the most difficult logistics assignment we have faced since World War II. The timetable for accomplishing all of this has been compressed tremendously within the last couple of months, partially by the timetable that was negotiated in the status of forces agreement with Iraq and partially by the decision that has been made to accelerate the plus up of forces in Afghanistan.<sup>4</sup>

Afghanistan requires a comprehensive review of sustainment support to determine if current practices can meet the logistics needs of a larger force. History proves that support to military forces operating in Afghanistan is difficult.

#### Afghanistan in Historical Context

For centuries, Afghanistan stood at the crossroads of great civilizations.<sup>5</sup> It served as the primary, land conduit connecting powerful empires of Central Asia, the Middle East, and the Indian subcontinent.<sup>6</sup> Because of its strategic location, warfare has plagued the region since the beginning of recorded history. The country presents similar challenges today as it did to conquering armies over 2,500 years ago. The physical challenges of weather and terrain make operations difficult for any army. Afghanistan's narrow mountain passes and river valleys present an unrelentingly harsh environment.<sup>7</sup> Accentuated by mountain peak elevations in excess of 24,500 feet, the Hindu Kush, an extension of the Himalayan Mountains, roughly divides the country in two. The majority of the population lives above 2,000 feet elevation. The deep, narrow valleys, as well as the high mountains, historically served as important natural, defensive measures for the country.<sup>8</sup> Afghanistan today shares borders on the north with Turkmenistan, Uzbekistan, and Tajikistan; on the northeast with a tip of China and Indian Kashmir; on the east and south with Pakistan; and on the west with Iran.

The Soviets experienced poor results in their logistics efforts during their invasion and occupation of Afghanistan in the 1980s. As a land-locked country, Afghanistan is extremely mountainous in the north and east and mostly desert in the south and west. Most significant to logisticians, Afghanistan lacks any significant transportation network. Afghanistan has no railroad system and lacks navigable rivers.<sup>9</sup> The Soviets maintained one fragile line of communication from the town of Termez in present-day Uzbekistan, through the Hindu Kush via a 1.5-mile-long tunnel at Salang, which terminated at two key logistics bases in Pol-e-Khomri and Bagram airbase.<sup>10</sup> Unlike current North Atlantic Treaty Organization (NATO) forces, the Soviets did not use the main road network connecting the capital of Kabul with cities in Pakistan running through the historic Khyber Pass located at the border of Pakistan and Afghanistan near Jalalabad.

Soviet logistics support was an evolving process of trial and error. Their doctrine developed for the European theater did not work in this difficult environment. Afghanistan became a static and protracted war that did not mirror the mobile form of warfare envisioned on the European battlefields against NATO forces.<sup>11</sup>

Long and complicated supply lines ran from Russia to Afghanistan. The Soviets could not rely on timely supply support from home depots due to the distances supplies had to travel. They resorted to forward stockpiling of critical supplies. To overcome the challenges imposed by terrain, they developed innovative aerial-delivery procedures to sustain forces operating in remote areas. Deployment of U.S. forces in 2001 would prove no less challenging as planners wrestled with a viable strategy to support military strikes on the Taliban.

### Initial Support to Operation Enduring Freedom

On 7 October 2001, the U.S. commenced military operations deep into Afghanistan to rout the Taliban and kill or capture key al Qaeda leaders. Original sustainment provided to small numbers of U.S. Special Operations Forces (SOF) and other governmental agency (OGA) personnel in Afghanistan transited predominantly by air from Europe, terminating at Karshi-Khanabad (K2) air base in Uzbekistan. When supply demands exceeded ALOC capacity, the U.S. Army Europe's (USAREUR) 21<sup>st</sup> Theater Support Command (TSC) task organized a logistical team, including a Materiel Management Center (MMC), ordnance battalion, and rigger company to support supply requirements from Uzbekistan. This forward-deployed element linked ALOC requirements generated from combat forces in Afghanistan with USAREUR supply bases in Germany, providing the critical synchronization cell needed to sustain ever-growing materiel requirements.

A Corps Support Group (CSG) Headquarters deployed in October 2001, to provide logistical and base operations support at K2.<sup>12</sup> On 15 November 2001, a task force occupied Bagram airfield and opened a forward logistics hub. To support a ground LOC from Uzbekistan to Afghanistan, coalition forces needed to capture the northern Afghan city of Mazar-e-Sharif. This strategic city would serve as a way station for supplies coming from Europe, through Uzbekistan, and terminating at Bagram.

Over time, U.S. and NATO forces increased in Afghanistan, and support organizations and processes adapted to meet their growing sustainment and distribution needs. With the subsequent U.S. military intervention in Iraq in March 2003, operations in Afghanistan became a supporting effort in the war on terrorism. Support to the Iraqi JOA expanded the sustainment capability in the CENTCOM Area of Responsibility

(AOR) . Forces in Afghanistan benefited from the expansion of enabling joint sustainment headquarters. Over time, fundamental changes occurred to the GLOC and ALOC flow into Afghanistan, reducing the reliance on 21<sup>st</sup> TSC in Germany, and placing greater support requirements on the 377<sup>th</sup> TSC and the CENTCOM Deployment and Distribution Operations Center (CDDOC), both headquartered in Kuwait.

#### A Review of U.S. Joint Sustainment Operations

OEF logistics, joint in nature, focuses on the integration of strategic, operational, and tactical support efforts with the key tasks of scheduling the deployment and redeployment of forces and delivery of materiel for the supported JFC. Supply and transportation of forces and materiel remain the two key elements of the sustainment mission. Forces from all services routinely deploy and redeploy from the theater of operation. Operation Iraqi Freedom (OIF) Joint Reception, Staging, Onward Movement, and Integration (JRSOI) operations consume a significant portion of the U.S. Air Force strategic lift, competing with Army Force Generation (ARFORGEN) and other service-rotation requirements to support other contingencies, including OEF.

To sustain the force in Afghanistan adequately, the Joint Force Commander must rely heavily on contracting and host-nation support to meet operational requirements. Regional geography creates challenges with extended GLOCs and ALOCs. A hugely-successful synchronizing element for distribution is the CENTCOM Deployment Distribution Operations Center (CDDOC), headquartered in Kuwait. Also referred to as the Joint Deployment Distribution Operations Center (JDDOC), United States Transportation Command (USTC) established the JDDOC for CENTCOM in 2004,

giving them authority to direct air and seaport operations and cross-country moves in the theater, in this case, the CENTCOM AOR, including Kuwait, Iraq, and Afghanistan.<sup>13</sup>

The JDDOC synchronizes End-to-End (E2E) distribution by focusing on those joint theater issues most affecting JFCs. They help prioritize requirements, measure performance, and recommend improvements concerning the overall effectiveness of the distribution chain. They assist the national logistics community and JFCs to develop a Common Operating Picture (COP) to achieve comprehensive visibility of U.S. Government, allied, coalition, host-nation, and commercial assets transiting the AOR.<sup>14</sup>

To this end, the U.S. seeks stronger cooperation within the region to maintain viable, strategic ALOCs and GLOCs throughout the AOR. However, a number of other dynamics are at work, creating unique political challenges to current and future strategic-access options. Two are particularly troublesome. Russia wishes to re-establish regional hegemony over their former Soviet territories<sup>15</sup> and unrest and uncertainty in Pakistan can potentially destabilize current GLOC access.

### Challenges of Strategic Partnerships in the Region

Maintaining and expanding strategic access to Afghanistan is fraught with political challenges. With the collapse of the Union of Soviet Socialist Republics (USSR) in 1991, Russia lost the lands and territories it had controlled for the better part of three centuries.<sup>16</sup> This collapse destroyed the rigid economic structure, which the Soviets had created, and many of the weak, democratic, successor regimes that emerged proved incapable of controlling the criminal gangs or creating functioning economies in the aftermath of the Soviet demise.<sup>17</sup>

Since the 1990s, these newly-independent nations in the Caucasian, Black Sea, Caspian, and Inner-Asian regions struggled to find their identity. Civil wars, regional conflicts, terrorism, ethnic unrest, crime, human rights abuses, economic despair, and political instability plagued the region, including Georgia, Armenia, Azerbaijan, Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan, and Tajikistan.

Russia began playing a more active, but less constructive role, across parts of the region beginning in 2001. Russian involvement in each country has its own character, but they have in common a Russia that is reasserting itself into the affairs of its much-smaller neighbors. Russia plays on ethnic, national, and economic tension to extend or reassert its influence in its “near abroad.”<sup>18</sup> The Russian near abroad is roughly described as the former republics or recognized, autonomous regions of the former USSR. In the Caucasian region, especially Georgia and the two breakaway provinces of Abkhazia and South Ossetia, Russia provides direct support to separatists. In other cases, such as the conflict between Armenia and Azerbaijan, Russia provides overt and covert support to keep these conflicts simmering. Russia, Belarus, and Ukraine formed the Commonwealth of Independent States (CIS) in 1991, and twelve of the fifteen former Soviet states have since signed the CIS charter. A similar Collective Security Treaty Organization (CSTO) formed to counter the ever-expanding NATO, free trade agreements, formal economic unions, and other cooperative efforts further strengthen regional allegiance to Russia.

As seen in 2005, Russia played a significant role in pressuring the Uzbek government to evict U.S. basing operations at Karshi-Kanabad. Ultimately, they restricted the flow of goods and services to other dependent nations in the region,



including support to NATO forces and the international community supporting reconstruction in Afghanistan. Thus, as recently as February 2009, the Kyrgyz president called for closure of the U.S. air base at Manas, a strategic hub for U.S. troop transit into and out of Afghanistan. The Manas air base serves as a staging, servicing, and bed-down site for U.S. Air Force aircraft and an important, commercial, contracted aircraft-servicing field in support of JRSOI. Nearly 15,000 U.S. personnel and 500 tons of supplies transit Manas air base every month. This volume will likely grow as the number of U.S. forces increases in Afghanistan in 2009. The joint Russian/Kyrgyzstan announcement came after promises from Russia of a major aid package to Kyrgyzstan.

Moscow likely signaled the deal as part of a broader strategy of limiting U.S. power in this former Russian sphere of influence.<sup>19</sup> The U.S. may consider resuming military cooperation with Uzbekistan as a backup base before the Kyrgyzstan government completes U.S. eviction. The U.S. provides \$150 million annually to Kyrgyzstan, including a yearly payment of \$63 million for rent of Manas air base.<sup>20</sup>

To ensure reliable, strategic access to the region, the United States and its European allies, through cooperation and partnership with Russia, China, and India, must play a significant role in shaping the Black Sea, Caucasian, Caspian, and Inner-Asian region. The smart applications of all national elements of power are critical to maintain vital, strategic access in support of OEF. The recent, increased attacks by anti-coalition forces on supply lines between Pakistan and Afghanistan require a strategy that pursues reducing dependence on the single Afghan-Pakistan GLOC. The U.S. must consider other access strategies for delivery of cargo to forces in Afghanistan.

### Reduce Dependence on Pakistani GLOC

Pakistan is central to support provided U.S. and other coalition forces operating in Afghanistan. Yet, a strained relationship existed between the U.S. and Pakistan prior to September 11, 2001. Following the fall of the Taliban regime in Afghanistan in 2001, then-Pakistani President-General Pervez Musharraf quickly decided to end his support for the Taliban regime and join the U.S.-led, anti-terrorist coalition. U.S. military operations in Afghanistan forced al Qaeda to take sanctuary in the western provinces of Pakistan, complicating U.S. efforts to kill or capture key leaders.

Enemy forces continue to take sanctuary in the Federally Administered Tribal Areas (FATA), allowing them to conduct insurgent and criminal operations against the Islamic Republic of Afghanistan (IRoA) and Pakistan. Insurgent attacks further destabilize the Afghan population and Afghan institutions and impact transportation and supply support originating from Pakistan destined for coalition forces in Afghanistan.<sup>21</sup>

In late 2001, the U.S. and Pakistan established a more meaningful partnership, establishing new policy and building cooperation on the War on Terrorism (WOT). Success in Afghanistan to date has been due heavily to the vital assistance provided by neighboring Pakistan.<sup>22</sup> Without the continued support from Pakistan, especially in the realm of critical basing, intelligence sharing, over-flight permissions, the use of deep-sea ports at Karachi and Bin Qasim, ground-transportation infrastructure, and fuel refinery support, the U.S. and its coalition partners would not enjoy the near-unconstrained access to Afghanistan from the east experienced to date.

Approximately 75-80 percent of all NATO and U.S. supplies bound for Afghanistan, including fuel, food, construction materiel, and unit equipment move overland through Pakistan.<sup>23</sup> The U.S. Air Force or contracted, commercial, air transport

flies the remaining 20-25 percent of supplies into airfields at Bagram, Kabul, and Kandahar. Materiel transiting by ground arrives at several terminal logistics hubs in Afghanistan operated by U.S. Army cargo transfer detachments. Twenty- or forty-foot SEALAND containers, the shipping industry standard, off-load from commercial, feeder ships in Pakistan, transit the Pakistani GLOC via commercial trucks, and terminate in Afghanistan. The U.S. contracts with three international commercial shipping companies, Maersk, American President Lines, and Hapag-Lloyd, to deliver materiel from its point of origin to Afghanistan. USTC and DLA contract the majority of Afghanistan-bound U.S. Government container-shipping requirements.

Pakistan does not allow U.S. military vessels to discharge or upload military cargo at Pakistani port facilities. Moreover, Pakistan limits U.S. personnel at the seaports, complicating asset visibility of U.S. cargo in-transit. The contracted, commercial-carrier companies are authorized third-party logistics (3PL) specialists to staff the ports and assist in accounting and onward-movement functions associated with container management. Containers arrive at Karachi or Bin Qasim and move by ground using contracted, Pakistani 3PL commercial-truck carriers, or Pakistani military-controlled, transportation cooperatives. The original, contracted, international, commercial-shipping companies own the end-to-end distribution process, including the contracting of host-nation and third-country trucking firms to deliver the containers from the ports to final destination.

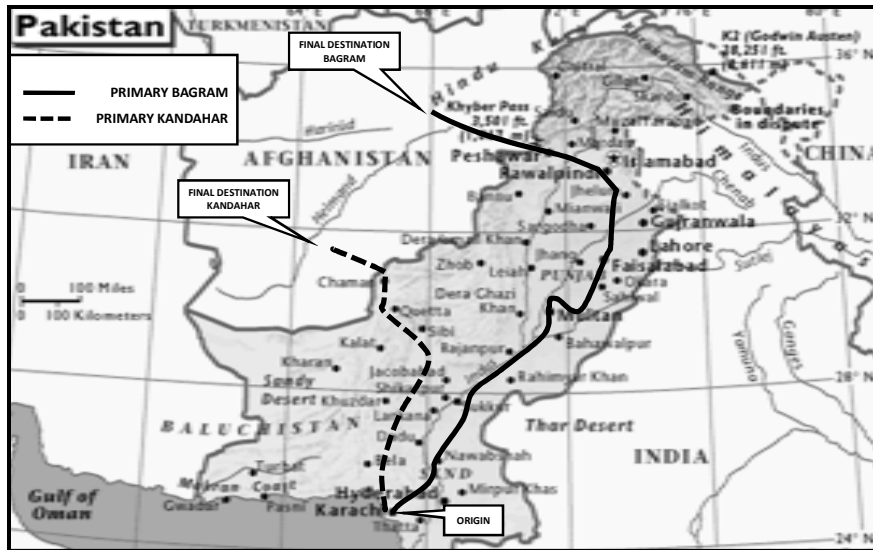


Figure 1. U.S. Ground Lines of Communication through Pakistan.

The ground LOC from the Pakistani seaports to Kabul, via Peshawar and the Khyber Pass, is approximately 1,250 miles long, with transit times averaging 5 to 14 days. The ground LOC from the same seaports to Kandahar, via the Bolan Pass and Chaman border crossing point in the south, is approximately 570 miles long, with transit times averaging 5 to 7 days. Weather, national holidays, industry strikes, border closings, hijackings, and insurgent attacks all affect actual transit times. By U.S. contract, the commercial truck carrier must provide In-Transit Visibility and security of all goods transiting the Afghan-Pakistani LOC. The carrier is contractually obligated to use Radio Frequency Identification (RFID) tracking devices, report scheduled or unscheduled delays, and protect containers in marshalling yards while at a halt. The contract also encourages, but does not mandate, trucks to travel in convoys to increase force protection.

Commercial trucks routinely backlog at choke points along the Afghan-Pakistani LOC, creating greater risk to attack when they mass at semi-secure and unsecure

marshalling areas. As one U.S. spokesperson stated, “Bandits and insurgents have long proclaimed they will attack our supply lines, though nothing they have done has caused any real impact to the military operations here.”<sup>24</sup> On 18 November 2008, the Taliban conducted a bold raid against twenty-three commercial trucks delivering NATO supplies in a Pakistani border region known as the Khyber tribal area. The Torkham border on the Pakistani side of the Khyber Pass temporarily closed to all traffic, blocking the key choke point that connects Afghanistan and Pakistan. This border closure is not a new occurrence.

On 7 December 2008, insurgents launched the single biggest assault on U.S. supplies in seven years. This attack destroyed nearly one hundred-sixty trucks at two Pakistani truck terminals near Peshawar. The loss included seventy military trucks destined for the Afghan National Army, purchased through a security assistance program.<sup>25</sup> On 3 February 2009, a thirty-yard long iron bridge fifteen miles northwest of Peshawar, Pakistan collapsed following an attack by Taliban militants, further complicating the fragile supply route through the Northwest Frontier Province.



Figure 2. Pakistan bridge damaged by insurgents<sup>26</sup>

There is no indication the threat to supply routes along the Afghan-Pakistani LOC will diminish soon. Insurgents are becoming more brazen in their attacks, and inflicting greater damage on convoys and marshalling yards with subsequent attacks. With the increase in shipping volume expected to support larger troop levels, U.S. planners must expedite re-opening a Northern Ground Line of Communication. The transportation community refers to this alternative GLOC as a Northern Distribution Network (NDN), similar to a European-based GLOC managed by DLA-Europe (DLA-E) prior to 2006.

Other ongoing initiatives focus on reducing Pakistani GLOC dependence. During the 2007-2008 timeframe, the Defense Energy Supply Center Middle East (DESC-ME), a subordinate command of DLA responsible for bulk-fuel support to CENTCOM forces, successfully diversified refined fuel deliveries from oil-refining nations in the Caspian-Sea region. This reduced dependence on Pakistani fuel shifted approximately 20 percent of the daily fuel deliveries from Pakistani refineries to Caspian-Sea refineries, reducing the number of vulnerable fuel tankers driving through the insurgent-dense Khyber Pass. CJTF-82 Headquarters requested similar GLOC options for other ground cargo in 2007, focused on dry goods, i.e., an alternate means of access through the Central Asian States, to reduce dependence on the Pakistani-only route.

#### Re-Establish Northern Distribution Network (NDN)

A northern GLOC, or NDN, would not be uncharted territory for the Department of Defense. From 2004 to late 2005, DLA-E expanded the Northern GLOC in support of OEF supply requirements originating from Europe. The DLA Contingency Support Team-Afghanistan (DCST-AF), located at Bagram air base, provided commodity support for DLA-managed classes of supply, including operational rations, bottled water,

bulk petroleum, and construction material.<sup>27</sup> DLA-E provided supply support to each service, as well as large government contractors, including Kellogg, Brown, and Root (KBR).

The GLOC originated in Germersheim, Germany at the Defense Distribution Depot-Europe (DDD-E) and twisted through Eastern Europe and Central Asia. The U.S. Department of State negotiated transit rights with all the supporting countries along the approved route. DLA-E prepared necessary customs paperwork to facilitate a smooth trip across ten countries. The supplies traveled through Germany, Austria, Hungary, Romania, Bulgaria, Georgia, Azerbaijan, Turkmenistan, and Uzbekistan, ultimately terminating at U.S. supply bases in Afghanistan. The route included a complicated network of rail, barge, and truck transfers. Multiple mode changes were necessary, including rail to barge at the Bulgarian seaport of Varna on the Black Sea and another rail-barge transfer at Baku on the Caspian Sea. The rail finally terminated at Karshi-Kanabad, Uzbekistan. Commercial trucking companies transported the twenty-foot and forty-foot SEALAND containers from the terminal railhead in Uzbekistan across the Afghanistan border.<sup>28</sup>

The U.S. considered other routes without success. Rail-gauge incompatibilities eliminated potential routes through the NATO partner nations of Poland and the Czech Republic. Customs restrictions also limited the types of materiel shipped via the northern GLOC. DLA thus shipped only bottled water and construction material on this route. The bulk of shipments consisted of lumber and HESCO barriers. On average, transit time from Germersheim, Germany to Bagram, Afghanistan was sixty days. During a 6-month period from June to December 2005, DLA shipped 480 twenty-foot

equivalent unit (TEU) containers. Every container moved with a RFID tag. One hundred percent of all containers shipped arrived at their final destination.<sup>29</sup> DLA stopped shipping materiel from Europe via the northern GLOC in December 2005 after Uzbekistan evicted the U.S. from K2 air base.

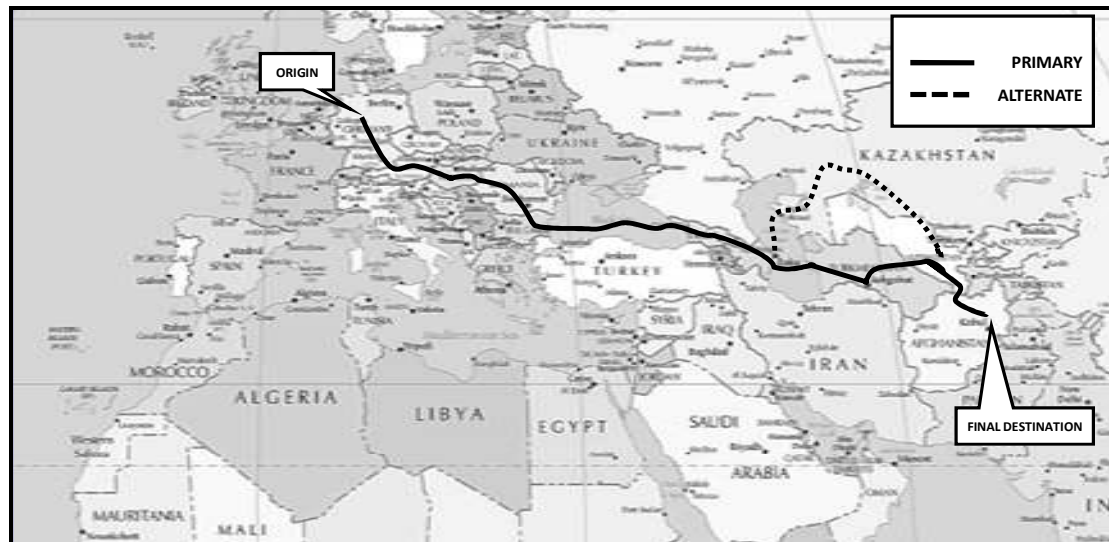


Figure 3. 2004-2005 Northern GLOC

The route from Uzbekistan to Afghanistan required negotiation of an 11,100-foot mountain pass and tunnel at Salang. The pass is located eighty-seven miles north of Bagram air base. It is the most expedient route connecting the Central Asian States to Kabul. The main tunnel is 1.5 miles long. Avalanches occasionally close the pass to north-south traffic. In 2006, the international community financed the repair of the Salang tunnel and rehabilitation of the 1,900 mile-long ring road, the highway system connecting most major Afghan cities. As outlined in the Afghanistan National Development Strategy (ANDS), transportation sector repairs will be complete by 2011.

The Salang tunnel and ring road are vital to the future economic growth and prosperity of Afghanistan. Kabul receives approximately 70 percent of fuel imports via



the Salang tunnel route and approximately 60 percent of the daily, U.S. military fuel requirements originate from Central-Asian refineries and pass through the Salang tunnel. With the exception of bulk-fuel shipments, most GLOC supply deliveries after 2005 would originate from Pakistani ports and traverse the Pakistani GLOC.

Recognizing the U.S. was assuming greater risk by shipping all GLOC materiel through Pakistan, USTC initiated a Request for Information (RFI) Market Survey in late 2007 to explore re-opening a Northern GLOC. Renamed the NDN, the new route would transport cargo from the U.S. and Europe to Afghanistan.<sup>30</sup> The intent of the market survey was to solicit ideas and opinions from the commercial transportation industry, determine capabilities, and identify potential sources for inter-theater, surface transportation of military cargo. USTC requested the industry to explore two options. The first option entailed moving cargo between Northern Europe, such as DLA facilities and prime vendors in Germany, to various destinations in Afghanistan through the Caucasus and Central Asia, similar to the original northern GLOC supporting U.S. forces from 2002-2005. The second option requested exploring the movement of cargo from the Continental United States (CONUS) to Afghanistan, through the Mediterranean Sea or Black Sea to Turkey or Georgia, with onward land movement via the Caucasus and Central Asia.<sup>31</sup>

The RFI outlined details that likely will appear in future solicitation packages. It seeks a capability to provide reliable and secure Time Definite Delivery (TDD), security, In-Transit Visibility, and end-to-end management of containerized and break-bulk military cargo. The majority of the cargo would terminate at Bagram or Kandahar airfields. The military cargo could consist of every class of supply, excluding bulk fuel,

weapons, and munitions. The scope and volume per year would potentially exceed 73,000 TEUs. The route would consider a mix of dry and refrigerated containers in an 85 percent / 15 percent mix. Additionally, break-bulk cargo could reach 20,000 short tons a year. The U.S. Government sought a thirty to forty-five day transit window. Commercial vendors submitted replies for consideration to USTC in November 2008.<sup>32</sup> A few companies proposed viable options and a subsequent test of the Northern Distribution Network followed.

On 3 September 2008, CENTCOM sanctioned DLA to test shipments using prime vendors to move materiel from Europe to Afghanistan. Named Commodity Movement Methods (CMM), these shipments would serve as initial experiments for the NDN, or new, ground, strategic-access route through Central Asia. On 16 September 2008, one commercial company accepted an offer to move ten TEU-containers of 3/4-inch plywood from Germany to Afghanistan along a NDN. The company proposed movement through Germany, Austria, Italy, Turkey, Georgia, Azerbaijan, Kazakhstan, Uzbekistan, and Afghanistan. Similar modal challenges confronted the test, including ferry operations from the port city of Trieste, Italy to Istanbul, Turkey and trucking operations through Turkey, Georgia, and Azerbaijan.<sup>33</sup>

The containers transited the Caspian Sea from Baku to Aqtau, Kazakhstan; resumed rail operations through Uzbekistan; and terminated at a railhead near Heyratan, in northern Afghanistan. A new rail bridge spanning the Uzbek/Afghan border, called the "Friendship Bridge," opened in 2007. The railhead is just south of the Uzbek city of Termez, where U.S. contracted, fuel shipments arrive via rail tanker-cars for download, storage, and truck-transfer operations. If the government of Kazakhstan

refused to transit the cargo, the company proposed an alternate route from Baku through Turkmenistan and Uzbekistan.



Figure 4. Northern Distribution Network proof of principal, November 2008<sup>34</sup>

The commodity-movement test initiated on 26 September 2008 proved successful, delivering ten containers of plywood from Germany to Bagram. The transit time was forty-nine days. USTC, partnered with DLA, will continue to test and improve NDN options, including CONUS-originating shipments via sea to potential seaports in the Mediterranean for follow-on ground movement to Afghanistan. As the NDN matures in capability and capacity, a reduction of materiel flowing through the Afghan-Pakistani GLOC will occur. The NDN will ensure an alternate supply route is operational in the event future political or threat-based developments disrupt or close the Pakistani GLOC.

The NDN will likely alleviate pressure on the Pakistani GLOC but other, regional, air basing challenges confront the U.S. and NATO leaders as they strive to maintain reliable strategic access into Afghanistan. Current air basing in support of JRSOI and cargo deliveries are problematic for air-transport managers. The U.S. and NATO, in

coordination with regional partners, must explore alternate Air Lines of Communication (ALOC) in light of the announcement that Kyrgyzstan will evict the U.S. from Manas air base in 2009.

#### Alternate, Regional Air Bases

Since 2001, the U.S. record of maintaining long-term air basing rights in the Caspian Sea and Central Asia is not good. During initial combat operations in late 2001, the U.S. negotiated temporary bases in Pakistan including Jacobabad, Pasni, and Dalbandin, used to support sustainment of U.S. Marines, SOF, and other governmental agencies (OGA) operating in forward bases in Afghanistan.<sup>35</sup> The Pakistani government did not support the U.S. request to establish permanent U.S. military bases in their country. The U.S. turned to Uzbekistan and Kyrgyzstan for help and in 2002 established temporary bases at Karshi-Kanabad (K2), Uzbekistan, and Bishkek (Manas), Kyrgyzstan.

In July 2005, the Uzbek government formally notified the United States of its decision to evict forces from Karshi-Kanabad (K2), giving the U.S. 180 days to vacate the country.<sup>36</sup> A rift over disputed human-rights abuses had grown between Uzbekistan and the U.S., further spoiling opportunities for ground-transit supply operations, and complicating delivery of bulk fuel from refineries in Azerbaijan and Kazakhstan.

In response to the K2 closure, the Defense Department shifted air operations to Manas air base in Kyrgyzstan, serving as the primary U.S. Air Force regional hub for forces in Afghanistan. Primarily used as a transfer hub of forces deploying and redeploying from OEF, approximately 15,000 personnel transit Manas every month. The airfield also serves as the terminus for commercial, contracted air carriers in support of

JRSOI. An Air Force C-17 detachment stationed in Manas shuttles forces into and out of Bagram and Kandahar on a daily basis. The U.S. Air Force stages aerial tankers there as well, used for in-flight refueling operations throughout the region. The U.S. has approximately 1,200 support personnel at Manas to run JRSOI, refuel, and emergency medical-evacuation operations.

There are multiple options to deal with the anticipated loss of Manas airfield. Each option requires diplomatic negotiation and a military assessment of proposed airfields. Each option is sensitive in nature and involves complicated dynamics that affect other regional stakeholders, including Russia, Iran, Pakistan, and China.

One option is to renegotiate with the Kyrgyz to meet their demand for more money and offer other security and cooperation agreements to secure a long-term commitment for strategic access through Kyrgyzstan. Another is for the U.S. to fall back on current operational airfields in Ali Al Salem, Kuwait and Al Udaid, Qatar and shift JRSOI operations to one or both of these facilities. This option is attractive from the perspective that U.S. presence is already established and JRSOI and refueling capability currently reside at these facilities. CENTCOM periodically executes limited JRSOI operations through these nodes in support of OEF to revalidate a standing contingency operation (CONOP). Occasionally Manas exceeds its JRSOI capacity. Kuwait serves as the alternate or backup JRSOI facility, alleviating pressure on Manas during surge operations.

The U.S. is exploring other options for potential basing agreements in Central Asia, including airfields in Turkmenistan, Kazakhstan, and Tajikistan. All three countries have signaled support of U.S. efforts to move non-military materiel via ground through

their country. Tajikistan is best postured to offer a viable air base at Farkhor/Ayni. However, current security and cooperation agreements between the Tajik Government and Russia and India may complicate American negotiation for access. Lastly, U.S. diplomats can deal with the Uzbek government to support reoccupation of the air base at K2.

Strategic air-base access is a pressing concern to U.S. planners. The U.S. must pursue a viable, sustained ALOC base structure in the region through a combination of diplomatic, economic, and military incentives if the U.S. is to secure long-term access to the region.



Figure 5. Strategic air-base options

### Improve In-Transit Visibility (ITV) and Container Security Technology

In-Transit Visibility shortfalls and pilfering of shipping containers continue to plague coalition forces operating in Afghanistan. In early 2007, the U.S. Department of Defense (DoD) maintained a limited, electronic, tracking network to assist transportation specialists to “see” containers and equipment transiting the Pakistani and Afghan GLOC. The DoD ITV standard includes the use of RFID transponder tags; fixed, portable, and handheld readers; associated hardware, software, and professional support all designed to track materiel in-transit. This Automatic Identification Technology (AIT) helps DoD supply-chain managers by providing Total Asset Visibility (TAV).<sup>37</sup> The RFID, land-based, interrogation network saw little expansion in Afghanistan from 2001 through 2007. Prior to 2008, a typical SEALAND container transiting the Pakistani and Afghan GLOC, affixed with an RFID tag, was interrogated upon arrival at the port in Pakistan, but received no interrogation en route until the container arrived at its final destination, either Bagram or Kandahar air bases.

A deliberate effort to expand the network commenced in early 2007. With the arrival of the Combined and Joint Task Force-82 (CJTF-82), automation specialists and ITV field-service engineers, work began to expand the network beyond the five existing transportation nodes: the Afghan bases at Bagram, Kandahar, Salerno, and Jalalabad; and the Pakistani port of Karachi.

In 2007, CJTF-82 HQs proposed and installed ten additional land-based ITV interrogators at sites throughout Afghanistan. Commodity managers, transportation specialists, and units could better track materiel moving around the area of operations. Pakistan authorized four, additional commercially-maintained and operated RFID

interrogators to read U.S. cargo shipments along the Pakistani GLOC, from Karachi to Torkham.<sup>38</sup>

In April 2007, CJTF-82 requested a new ITV technology for Afghan-bound cargo. The RFID system is antiquated and requires establishment of land-based interrogators along an existing route and at major transportation hubs. The interrogator can only report the location of tagged materiel when the RFID device comes in proximate location of the land-based reader. A land-based interrogation system is labor intensive to install, expensive to maintain, and fails to provide real-time visibility. A satellite-based tracking system, available commercially off-the-shelf, is the preferred technology for future ITV application. DoD must transition from interrogator-based RFID to satellite-based tracking devices to improve In-Transit Visibility in such inhospitable, large expanses.

A final ITV initiative in Afghanistan included the experimentation with anti-pilferage RFID tag technology. ITV specialists developed and fielded several-hundred devices capable to detect tampering of SEALAND containers. The device allowed transportation specialists to determine if a breach occurred with a container while in-transit. The tag monitored a number of tampering indicators including shock, light exposure, or door openings. If the tag sensed a change in the condition of the container, such as a breach of the door, it would electronically alert the RFID interrogator and allow container managers to treat the container as suspicious and worthy of further inspection.

USTC is experimenting with another market-ready, container-security device called the *CommerceGuard* Container Security Device (CSD); a technology developed



by General Electric Security, Inc. SDDC incorporated the use of the *CommerceGuard* CSD in September 2008 for containers moving between Pakistan and Afghanistan. Commercial shippers use the *CommerceGuard* system today.<sup>39</sup>

In 2007, CJTF-82 established a Pilferage Work Group to measure statistically the scope of OEF pilferage during a fifteen-month period in 2007 and 2008. Prior to 2007, the U.S. treated the loss of materiel at the hands of insurgent or criminal activity as simply the cost of doing business. In 2005, reported pilferage losses amounted to approximately \$1.2 million. In 2006, it grew to \$7.1 million. The group expanded the categories of loss, including unit cargo, fuel, Prime-Vendor foodstuffs, and contract-acquired materiel. The Work Group demonstrated that the pilferage problem was growing, with a reported \$9.2 million loss during 2007.<sup>40</sup>

The Work Group established a number of anti-pilferage initiatives to try to halt or reduce the disturbing trend. Every major U.S. fuel storage site in Afghanistan installed fuel-flow meters to record Host Nation (HN) fuel-truck issues and receipts. Additionally, Movement Control Teams (MCT) opened and inspected each container in the presence of the HN driver when it arrived at a container yard. If the materiel manifest did not match the physical cargo in the container, the MCT detained the driver and turned him into local authorities. HN truckers continued to find ways to defeat the anti-pilferage measures. The loss trends highlight the need for ever-improving security measures for U.S. supplies transiting the GLOC, an increasing force-protection concern.

### Recommendations and Conclusion

In 2009, U.S. forces will increase in Afghanistan, complicating the strategic ability to reach and sustain forces. The U.S. must tackle early the challenges faced with a

larger military footprint in Afghanistan. This paper outlined five recommendations to improve strategic access to Afghanistan. The recommendations follow historical study and review of identified, systemic challenges in the Afghan area of operation, as well as changing conditions due to increased troop commitments, basing rights, and pilferage challenges. Therefore, the following recommendations form a comprehensive package to maximize the effectiveness of U.S. strategic access to the region.

The U.S. must first start pre-eminently with diplomatic engagement in the region, ensuring Central-Asian states support U.S. access to and through the region. Effort begins by strengthening regional partnerships, including Russia, China, India, and Pakistan. The U.S. must provide the necessary diplomatic, economic, and security cooperation enticements to ensure reliable, strategic, air, and ground access agreements.

Second, the U.S. should pursue a strategy that reduces overall dependence on the Afghan-Pakistani GLOC. In light of heightened attacks on supply trucks transiting remote and ungoverned areas along the Afghan-Pakistani border, the U.S. must explore alternate routes for ground re-supply.

Third, the U.S. and NATO should re-establish a Northern Ground Line of Communication, or Northern Distribution Network (NDN). It should originate from Europe and transit the Caspian Sea and Central Asia. The NDN should build on the operational successes experienced by DLA from 2004-2005, by focusing on non-sensitive, bulk supplies to include construction material and rations. As the route matures, the NDN can expand to include other classes of supply. An expanded distribution network should ultimately consider CONUS-originating, commercial routes

that discharge at eastern Mediterranean ports with follow-on, ground transit through Central Asia.

Fourth, the U.S. must maintain an air base regionally positioned to facilitate reach to Afghanistan and should seek alternate, regional bases to provide flexibility for JRSOI to offset the loss of the Manas airfield in Kyrgyzstan. Options can include negotiating for new or renewed access in Uzbekistan, Turkmenistan, Kazakhstan, and/or Tajikistan. In the interim, transportation specialists must leverage the existing U.S. military presence in Kuwait and Qatar to facilitate increased JRSOI requirements.

Lastly, industry allows for improved In-Transit Visibility and container security technology. The U.S. should replace outdated interrogator-based RFID technology with a satellite-tracking system, incorporating satellite-based technology on all U.S. shipments. Future, commercial shipping contracts should contain strong contract language that helps reduce pilferage, curb loss of property, and increase force protection.

By incorporating these five recommendations, strategic access to Afghanistan will improve and will build the necessary support infrastructure to sustain, deploy, and redeploy increased force commitments. Strategic access, or the inability thereof, can determine the difference between success and failure in support of Operation Enduring Freedom.

## Endnotes

<sup>1</sup> Robert M. Gates, "Senate Armed Services Committee Testimony – Afghanistan and Pakistan," *Congressional Record* (January 27, 2009), 1.

<sup>2</sup> Michael Gordon and Thom Shanker, "Plan Would Shift Forces from Iraq to Afghanistan", *The New York Times*, September 4, 2008, <http://www.nytimes.com/2008/09/05/world/middleeast/05military.html?partner=rssnyt> (accessed September 6, 2008).

<sup>3</sup> U.S. Joint Chiefs of Staff, *Joint Operations*, JP 3-0 (Washington, DC: U.S. Joint Chiefs of Staff, September 17, 2006), III-30.

<sup>4</sup> Kathleen Rhem, "New director calls DLA 'national asset,'" November 19, 2008, linked from *Defense Logistics Agency Homepage* at Media Center, [http://www.dla.mil/DLAPublic/DLA\\_Media\\_Center/TopStories.aspx?ID=420](http://www.dla.mil/DLAPublic/DLA_Media_Center/TopStories.aspx?ID=420) (accessed December 3, 2008).

<sup>5</sup> Stephen Tanner, *Afghanistan. A Military History from Alexander the Great to the fall of the Taliban*, (Cambridge, MA: Da Capo Press, 2002), 1.

<sup>6</sup> Ibid. 2.

<sup>7</sup> Ibid. 3.

<sup>8</sup> Afghanistan On-line. <http://www.afghan-web.com/geography/lr.html>

<sup>9</sup> Charles A. Russo, *Soviet Logistics in the Afghanistan War*, Strategy Research Project (Carlisle Barracks, PA: U.S. Army War College, April 26, 1991), 2.

<sup>10</sup> Ibid. 3.

<sup>11</sup> Ibid. 5.

<sup>12</sup> John A. Bonin, "U.S. Army Forces Central Command in Afghanistan and the Arabian Gulf During Operation Enduring Freedom: 11 September 2001-11 March 2003," (Carlisle, PA, Army Heritage Center Foundation, March 2003), 8.

<sup>13</sup> Defense Link, *Case in Point: Joint Deployment Distribution Operations Center (JDDOC)*, <http://www.defenselink.mil/dbt/cip-ddoc.html>, November 17, 2008.

<sup>14</sup> Defense Energy Support Center, "End-to-End (E2E) Distribution", <https://www.desc.dla.mil/DCM/DCMPage.asp?pageid=631>, (accessed December 22, 2008).

<sup>15</sup> R. Craig Nation, "Russia, the United States, and the Caucasus", (Carlisle, PA, Army War College Strategic Studies Institute, February 2007), 13.

<sup>16</sup> U.S. Joint Forces Command, *The Joint Operating Environment 2008: Challenges and Implications for the Future Joint Force*, JOE 2008. (Suffolk, VA: U.S. Joint Forces Command J59, November 2008), 30.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid., 31.

<sup>19</sup> Jane's, "Kyrgyzstan Calls for Closure of U.S. Manas Airbase", February 5, 2009, in *Janes*, (accessed February 5, 2009).

<sup>20</sup> FOX News, "U.S. Considers Uzbekistan as Backup Base", February 5, linked from *FOX News.com*, <http://www.foxnews.com/politics/2009/02/05/considers-uzbekistan-backup-base-military-officials-say/>, (accessed February 5, 2009).

<sup>21</sup> K. Alan Kronstadt, *Pakistan and Terrorism: A Summary* (Washington, DC: Library of Congress, Congressional Research Service, March 2007), CRS-4.

<sup>22</sup> *Ibid.*, CRS-1.

<sup>23</sup> Candace Rondeaux and Walter Pincus, "U.S. Seeks New Supply Routes Into Afghanistan", November 19, 2008, linked from *The Washington Post Online*, <http://www.washingtonpost.com/wp-dyn/content/article/2008/11/18/AR2008111803940.html>, (accessed December 6, 2008).

<sup>24</sup> *Ibid.*

<sup>25</sup> FOX News, "More than 160 NATO Supply Trucks Torched in Pakistan", December 7, 2008, linked from *FOX News.com*, <http://www.foxnews.com/story/0,2933,463124,00.html>, (accessed December 7, 2008).

<sup>26</sup> Salmon Masood, "Bridge Attack Halts NATO Supplies to Afghanistan", *The New York Times Online*, February 3, 2009, <http://www.nytimes.com/2009/02/04/world/asia/04pstan.html?hp>, (accessed February 16, 2009).

<sup>27</sup> Defense Logistics Agency-Europe, "The DLA Contingency Support Team-Afghanistan: Supporting the War Fighter in the Combat Zone", briefing slides, Stuttgart, GE, DLA-E, March 1, 2005.

<sup>28</sup> COL Robert W. De Jong, Student, U.S. Army War College, interview by author, Carlisle PA, January 30, 2009.

<sup>29</sup> *Ibid.*

<sup>30</sup> USTRANSCOM Command Acquisition, "Request for Information Market Survey. Transportation of cargo to/from Northern Europe to/from various locations in Afghanistan", October 14, 2008, linked from *FedBizOpps.Gov*, [https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=a66506c9e5954801bc889c5e83b24b88&\\_cview=0&cck=1&au=&ck=](https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=a66506c9e5954801bc889c5e83b24b88&_cview=0&cck=1&au=&ck=), (accessed December 6, 2008).

<sup>31</sup> USTRANSCOM RFI, "Request for Information Market Survey. Transportation of cargo to/from Northern Europe to/from various locations in Afghanistan", linked from *FEDBIZOPPS.GOV*, [https://www.fbo.gov/index?s=opportunity&mode=form&id=400b02f6ef2cc84c34b30da5c146b248&tab=core&\\_cview=1](https://www.fbo.gov/index?s=opportunity&mode=form&id=400b02f6ef2cc84c34b30da5c146b248&tab=core&_cview=1), (accessed December 23, 2008).

<sup>32</sup> *Ibid.*

<sup>33</sup> Defense Supply Center Philadelphia, "Northern GLOC Proposed Routes CMM 1-1A", briefing slides with scripted commentary, Philadelphia PA, Defense Supply Center Philadelphia, October 27, 2008.

<sup>34</sup> Ibid.

<sup>35</sup> Nadeem Malak, "U.S. Military Seeks Deeper Roots in Pakistan", *Asia Times Online*, January 30, 2002, <http://www.atimes.com/c-asia/DA30Ag01.html> (accessed February 18, 2009).

<sup>36</sup> Robin Wright and Ann Tyson, "US Evicted from Airbase in Uzbekistan", July 30, 2008, linked from the Washington Post Online, <http://www.washingtonpost.com/wp-dyn/content/article/2005/07/29/AR2005072902038.html> (accessed December 6, 2008).

<sup>37</sup> SAVI Technology, Inc, *A SAVI Case Study on Support of U.S. Military Operations in Afghanistan and Iraq*, December 2003, (Sunnyvale, CA: December 2003), <http://www.m2mpremier.com/UploadFiles/Savi%20Technology3.pdf>, (accessed December 23, 2008).

<sup>38</sup> Combined Joint Task Force-82 CJ4, *Director of Logistics AAR January 2007 – April 2008 Operation Enduring Freedom VIII*, After Action Report (Bagram, Afghanistan: Combined Joint Task Force-82 HQS, March 2008), 62.

<sup>39</sup> USTRANSCOM News Service, "USTRANSCOM deploys container security system to better protect U.S. military supply chain", September 3, 2008, linked from *USTRANSCOM Home Page*, <http://www.transcom.mil/pa/body.cfm?relnumber=090308-1>, (accessed December 23, 2008).

<sup>40</sup> Combined Joint Task Force-82 CJ4, *Director of Logistics AAR January 2007 – April 2008 Operation Enduring Freedom VIII*, 8.